Arrhythmia Intervention

GW25-e4548

The earliest retrograde activation during sinus rhythm-guided for left posterior fascicular ventricular tachycardia ablation: role of the new mapping in an attempt to improve procedural effectiveness

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Objectives: To investigate whether the earliest retrograde activation during sinus rhythm -guided for left posterior fascicular ventricular tachycardia ablation further contributes to the identification of critical sites of VT reentry and whether this translates into a more effective ablation outcome in a cohort of patients undergoing VT ablation.
Methods: This study retrospectively analyzed 86 consecutive patients (mean age 36.3±5.9 years) referred for catheter ablation of electrocardiographically documented LPF VT. Programmed stimulation was performed to induce tachycardia, while mapping and ablation was aided by use of a 3D electroanatomical mapping system. Catheter ablation targeted the earliest potential suggestive of retrograde activation within the posterior Purkinje fiber network (retro-PP) recorded along the posterior mid-septal left ventricle during SR if LPF VT was noninducible.
Results: 80 patients (45 men; mean age 34±9 years) had inducible VTs. The mean tachycardia cycle length was 315±33 ms. Overall, 75/86 (87%) patients underwent successful catheter ablation in SR targeting the earliest retro-PR. In none of the patients, ablation resulted in LPF block. No procedure-related complications occurred. Ablation was successful in all. After a median follow-up period of 2.9 (0.8-5.9) years, 81/86 (94%) patients were free from recurrent VT.
Conclusions: In patients presenting with LPF VT, ablation of the earliest retro-PP along the posterior mid-septal LV during SR results in excellent long-term outcome during a median follow-up period of almost 2.9 years.

GW25-e5357

Influence of angiotensin-converting enzyme gene insertion/deletion polymorphism on occurrence and recurrence of atrial fibrillation: A systematic review and Meta-analysis

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Objectives: This meta-analysis was to explore the influence of angiotensin-converting enzyme gene insertion/deletion (ACE I/D) polymorphism on atrial fibrillation (AF) occurrence and recurrence.
Methods: Case-control or cohort studies evaluating the association between ACE I/D polymorphism with AF risk and its recurrence after catheter ablation were searched in electronic databases. Meta-analyses were performed by reviewing 15 studies for AF occurrence and 2 studied for AF recurrence. Odds ratio (OR) and 95% confidence interval (CI) were used to evaluate. Statistical analysis was performed with Review Manager 5.2 and Stata 11.0.
Results: A total of 1981 AF patients and 3837 controls obtained from 15 case-control studies were included. There were 6 studies involving Caucasians and 9 studies involving Asians. The combined results showed significant associations in recessive model [DD versus ID+II], heterozygote comparison (DD versus ID), homozygote comparison (DD versus II) and multiplicative model (D versus I) on the basis of all studies. On subgroup analysis by ethnicity, similarly outcomes were also identified in recessive model and heterozygote comparison (DD versus ID) in both Caucasians and Asians, while homozygote comparison and multiplicative model lost part association. In the meta-analysis involving 145 AF recurrence cases and 285 AF non-recurrence cases obtained from 2 cohort studies, genotype DD significantly increased the risk of AF recurrence after catheter ablation under the recessive model.
Conclusions: Our investigations demonstrate that ACE I/D polymorphism is associated with increasing the risk of AF occurrence and recurrence. The genotype DD of ACE gene is a risk factor.

GW25-e3390

Treatment of Ventricular Tachycardia with Structural Heart Disease by Substrate Modification Ablation guided with 3-dimensional mapping system in 7 Patients

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Objectives: To investigate the methods, electrophysiological characteristics and the treatment outcomes of ventricular tachycardia (VT) with structural heart disease by substrate modification ablation under the guidance of contact 3-dimensional mapping system.
Methods: From 2013 May to 2014 March, Seven patients with structural heart disease (4 patients with dilated cardiomyopathy, 2 patients with ischemic cardiomyopathy, 1 patient with arrhythmogenic right ventricular cardiomyopathy) with recurrent VT attack (3 cases with syncope) underwent cardiac electric reconstruction by the guidance of contact 3-dimensional mapping system. The scar area was arbitrarily defined as<0.5 mV (ventricular bipolar voltage). To mark late ventricular potential during sinus rhythm along with diastolic potential during VT in and around scar tissue. The areas with special potential, as mentioned above, underwent saline-irrigated catheter ablation (35-40W, 43°C, 17ml/min) in flake radiofrequency ablation until the special potential disappeared. Before the end of ablation, programmed ventricular stimulation was repeated to induce no clinical VT definitely.
Results: All seven patients were mapped the low voltage area (1 case in the epicardial surface, 6 cases in the endocardial surface). The low voltage area (6.0-85.5 (31.0±17.7) cm^2) occupied 5.4-25.1(14.5±5.2) of the ventricular area. Late ventricular potential could be marked during sinus rhythm in and around low voltage area. Among seven patients, 12 VTs were induced during the procedure (2 VTs originating from right ventricle, 10 VTs originating from left ventricle). Ventricular diastolic potential could be recorded during VT attack. All seven patients were completed ablation successfully (1 case appeared ventricular fibrillation and then given electrical cardioversion). The success rate of immediate substrate modification ablation was 100 %(ablation points 19-331 (112.7±62.4), ablation time 120-240 (159.3±37.6) min). Only 3 patients accepted ICD implantation post ablation because of charge and will. During the follow-up 1-11 months, 1 patient who accepted ICD implantation died of sudden cardiac arrest, the others didn't appeared VT.
Conclusions: The treatment outcome of substrate modification ablation under the guidance of contact 3-dimensional mapping system is effective and safe for patients of VT with structural heart disease.

GW25-e1157

Initial application experience of a new multi-polar saline-irrigated mapping and ablation catheter

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Objectives: To investigate the safety and validity of a new muti-polar saline-irrigated mapping and ablation catheter (nMARQ) for pulmonary vein isolation(PVI).
Methods: Nine patients with symptomatic atrial fibrillation were received ablation with the nMARQ catheter. After waiting for 15 minutes when PVI was archived by the nMARQ catheter, PVI was rechecked by a Lasso mapping catheter. Additional ablation with the nMARQ catheter was redo if there was a gap conduction between pulmonary vein (PV) and left atrium. The time of the mapping and ablation of each PV, the X ray exposure, the ablation release mode and the acute PVI were recorded.
Results: A total of 130 times ablation were released on the 33 PVs with mean 3.9 times ablation per PV, including 44 times (33.8%) on LSPV, 38 times (29.2%) on LIPV, 24 times (18.5%) on RSPV, 24 times (18.5%) on RIPV. Energy released by full polars or selected polars took half and half. After 15 minutes waiting after PVI by the nMARQ catheter, conduction recovered. On 5 PVs (all LIPV). The mean time of the PV mapping, the ablation, the whole procedure, the whole mapping, the total ablation time, the X ray exposure time were 9.9 minutes, 3.6 minutes, 134 minutes, 37 minutes, 13 minutes, 21 minutes. The mean of X ray exposure dosage was 35460 mGy/cm2. A total of 18 times of esophagus temperature alarm, including 4 times (9.1%) on LSPV, 10 times (26.3%) on LIPV, 4 times (16.7%) on RIPV. The success rate of PVI was 93.9% after ablation. No procedure related complications occurred during the ablation procedure and the inpatient period.
Conclusions: PVI can archived by the nMARQ catheter safely and effectively with a higher success rate.

GW25-e4344

The early status of warfarin management in patients with atrial fibrillation after catheter ablation

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Objectives: To analyze the anticoagulation management status in patients undergoing atrial fibrillation (AF) ablation and were treated with warfarin.
Methods: Five hundred and ten patients with nonvalvular AF (NVAF) undergoing catheter ablation were retrospectively analyzed. All the patients discontinued warfarin before ablation procedure and used low molecular weight heparin (LMWH) to "bridge" anticoagulation before and after ablation. The International Normalized Ratio (INR) was recorded at the 1st week, 2nd week, 3rd week, 4th week, 2nd month, and 3rd month. Time in therapeutic range (TTR) was assessed.
Results: A total of 510 patients (64.7% male) with NVAF underwent 2669 INR measurements within 3 months. The mean age was 57.8± 11.0 years and the mean